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ABSTRACT

The effectiveness of three instructional approaches was investigated in a study of how best to facilitate vocabulary acquisition. The three approaches were (1) the cognitive approach, a method employing dictionary worksheets and patterned after the most commonly used method of teaching vocabulary; (2) the affective approach, which urged students to "anchor" new word meanings to subjective associations and prior experiences; and (3) the proprioceptive approach, which employed kinesthetic activities to supplement visual and auditory stimuli in a manner that helped students develop an internal counterpart to the cognitive associations of a word. Subjects were 27 fifth and sixth grade students randomly assigned to six treatment groups that were rotated by treatment, lesson time, teacher, and lesson content. Words to be taught and tested were taken from the "Teacher's Word Book of 30,000 Words." Students completed posttests that measured their ability to write the meaning of a word, to choose a word's meaning from a list of possible answers, and to complete a sentence using one of three words. Results indicated that the proprioceptive and affective approaches to vocabulary acquisition were more enhancing of word concept formation than the cognitive approach, which was adequate when the test task was least demanding of deep learning. (FL)

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Differential Effects of Cognitive, Affective, and Proprioceptive Instructional Approaches on Vocabulary Acquisition

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Few would argue that acquisition of a rich vocabulary benefits listening, reading, speaking, writing and thinking. Nonetheless, there has been relatively little interest in the study of this process in recent years. Ironically, the conclusions reached by two independent and extensive reviews of the literature on vocabulary acquisition may have further muted the very interest these intended to stimulate. That conclusion was that most any method to improve vocabulary seems to result in some gains, but no method appears to have a significant edge over the others (Petty, 1967; Manzo & Sherk, 1972). This conclusion seems a bit unsettling in view of the established relationships between vocabulary and most all other developmental functions.

This study re-examined the question of how best to facilitate vocabulary acquisition. The basic research question was made more precise by the addition of two distinctions. First, the three instructional methods were drawn from three categorically different generic approaches; and second, the learning outcomes were evaluated qualitatively as well as quantitatively. A small sample, counterbalanced design was employed, primarily to control for the "teacher" variable which tends, in most methods research, to overshadow the treatment effects. A dictionary worksheet

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method represented the traditional Cognitive Approach. The Affective Approach was represented by a newer and somewhat less conventional method stressing subjective-affective associations with new words. The Proprioceptive Approach was represented by an entirely new and quite unconventional method which sought to achieve cognitive growth in vocabulary by means of motoric associations and learnings.

The research design and findings follow a fuller description of the teaching strategies represented. The basic paradigm for each teaching method is described in order to permit the reader to form a personal appraisal of each strategy and potentially to be able to employ the method(s) of choice. The last two steps of each method were conducted in an identical way so as to reduce differences other than those which could be attributed to the generic approaches.

APPROACHES

Cognitive Approach: Dictionary Worksheet

This method was fashioned to resemble the most commonly employed approach to teaching new word meanings. Its form is based upon the findings of a study of teacher opinions which indicated that most teachers tend to prefer vocabulary activities which involve little or no direct teaching, and which stress dictionary use, context, and incidental attention to new words (Addy, 1941, as cited in Spache & Spache, 1973).

1. Students were given a "word learning worksheet" consisting of 8 words, each followed by a sentence using the new word.

2. Students were instructed to look up each word in a dictionary and to copy the definition which best fit the use of the word in the worksheet sentence.

3. The teacher supervised the students' work by observing their individual progress, pointing out errors, and/or discussing selected word meanings with a student.

4. Students read a short passage containing each of the 8 new words.

5. The teacher directed a discussion of the passage, using the new words as often as possible so that these might be further refined and reinforced through oral language usage.

Affective Approach: Subjective Approach to Vocabulary (SAV)

SAV (Manzo, 1982) is a procedure which urges students to "anchor" new word meanings to subjective associations and/or prior experiences. The associations evoked in a typical lesson are intended to represent a subjective-affective counterpart to conventional objective-cognitive learnings. Presumably, new word meanings would become labels for existing knowledge and feelings, and therefore a basis for expanding student schemata, or structures and strategies for word learning. The SAV steps followed in this study are described below.

1. The teacher showed a word (printed on a card), pronounced it, and told what it meant. The students wrote the word on the front of an index card, and the meaning on the back of the card.

2. The teacher asked the students what the word reminded them of.

(The teachers were ready with a few examples in case the students were unable to respond initially.)

3. After various associations were offered, students wrote one association (their own or someone else's) below the definition on the back of their index card.

4. Students read a short passage containing the 8 words.

5. The teacher directed a discussion of the passage, using the new words as often as possible so that these might be further refined and reinforced through oral language usage.

Features of this approach are rooted in studies and approaches employed by Haggard (1980) and Duffelmeyer (1978, 1980).

Proprioceptive Approach: Visual-Auditory-Kinesthetic Vocabulary (VAK)

Kinesthetic, or proprioceptive instructional methods are those which "incorporate muscle movements to supplement visual and auditory stimulii" (Bush & Waugh, 1982). Developmental psychologists have observed that young children first respond to a stimulus with gross motor movements which signify that stimulus. Over time, the motor movements become increasingly refined until the "motor meaning" is interiorized as a "sybolic meaning" (Piaget, in Phillips, 1923, p. 36). In this way, the meaning for the word has an internal and potentially self-stimulating, counterpart to the cognitive association. The VAK-Vocabulary Method, then, simply attempts to connect a new word (a "symbollic" label) with a student-suggested "motor meaning". The procedure, developed by Casale, has been employed with

students from intermediate through college freshman levels.

1. The teacher showed a word (printed on a card), pronounced it, and told what it meant.

2. The teacher asked students to imagine a simple pantomine for the word meaning ("How could you 'show' someone what the word means?").

3. When the teacher gave a signal, the students did their pantomines simultaneously.

4. The teacher selected the most common pantomine form, "showed" it to the students, who then said the word while doing the pantomine.

5. The teacher repeated each new word, directing the class to do the pantomine and say a brief meaning, or synonym.

6. Students read a short passage containing the 8 new words.

7. The teacher led a discussion of the passage, using the new words as often as possible so that these might be further refined and reinforced through oral language usage.

This strategy is cognate to ideas and strategies such as are represented by the "neurological impress" method of teaching word recognition (Heckelman, 1969), the Fernald-Keller VAKT method of word recognition and spelling (Fernald, 1943), and the value assigned to "proprioceptive" learning by behavioral therapists such as Wolpe (1958).

METHOD

Subjects

The subjects were 27 fifth and sixth graders from a midwestern private elementary school.

Subjects were randomly assigned to six treatment groups: fifth graders to 3 groups and sixth graders to 3 groups. These six small groups were rotated by treatment, lesson time, teacher, and lesson content as illustrated in Table 1.

Design

A modified counterbalanced design, using latin squares for the rotation system, permitted each of the subjects to receive each of the three treatments, and controlled for teacher, lesson content, and lesson order. Random assignment of subjects to groups controlled for the effects of prior knowledge. The independent variable was method, and the dependent variables, described ahead, were post test scores on three subtests and a total score.

Teaching Materials and Instrumentation

Words to be taught and tested were taken in a two-stage process from the Teacher's Word Book of 30,000 Words (Thorndike & Lorge, 1963). Initially 100 words were identified from that list which met the criterion set by Thorndike & Lorge for 5th and 6th graders (p. xi). From these, 24 words were selected randomly and assigned to 3 lists of 8 words each. The practice passages employed in each treatment also were constructed from each set of 8 words. The readability of the passages, by Fry's formula (1977), was estimated at 6, 6, and 5.

Four post test scores were derived by manipulation of the test task. Post test I required students to write the meaning of a word, with only the printed word as stimulus. Post test II required selection of a word's

meaning from 4 possible choices with no other cues. Post Test III required completion of a sentence from three choices, thus providing the most cues of the three test tasks.

Instructional Provisions

Instruction was provided by 6 volunteer teachers participating in a graduate level summer workshop on vocabulary methods. Each instructional strategy was described to the 'teacher-agents' (to coin a needed term for teachers acting as representatives of the researcher). These six volunteers were provided with practice in each of the three lesson strategies prior to implementation.

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insert Table 1 about here

Statistical Analyses

A randomized block analysis of variance was employed to test for treatment effects. This statistic provides a correction factor to control for the repetition of subjects across treatments.

Findings

Treatment effect was found to be statistically significant at the .01 level for post tests I, II and Total. Table 2 provides mean post test raw scores and percentages by treatment. Tables 3, 4, 5, and 6 provide uncorrected and corrected F values and significance levels of the treatment for each dependent variable: Post test I - Recall; Post test II - Recognition, Post test III - Context, and Total.

Discussion

The VAK and SAV approaches to word learning appear to be more enhancing of word-concept formation than does the traditional approach, which was adequate where the test task was least demanding of deep learning.

In general, these findings seem to conform to Piagetian stages of development, popular "needs" heirarchies, most phylogenetic and ontogenetic theories of brain development, and to common sense.

The data appears to be saying that verbal learning has primary proprioceptive (nerve-muscle-motor) properties, secondary emotional (subjective consciousness) properties, and tertiary cognitive (sedentary) features. This seems to suggest that to the extent that it is possible, it would be prudent to organize teaching-learning experiences to conform to this seemingly natural order.

Replication of this study with "normal" subjects at different stages of development would lend further credibility to the generalizability of these conclusions. The glaring implications in these findings to those judged to be remedial readers, learning disabled, neurologically dysfunctional, and/or different in language or cultural background also appears to deserve further empirical inquiry.

Table 1

Study Design

Student Group	Approach	Teacher	Content	Approach	Teacher	Content	Approach	Teacher	Content
I	Dict	A	a	SAV	B	b	VAK	C	c
II	VAK	B	a	Dict	C	b	SAV	A	c
III	SAV	C	a	VAK	A	b	Dict	B	c
IV	Dict	D	a	SAV	E	b	VAK	F	c
V	VAK	E	a	Dict	F	b	SAV	D	c
VI	SAV	F	a	VAK	D	b	Dict	E	c

Table 2
Post Test Mean Scores by Instructional Approach
N (each method) = 27

Strategy	Recall	Recognition	Context	Total
Dictionary	43% 6.8/16	71% 11.3/16	76% 12.1/16	63% 30.2/48
SAV	50% 8.0/16	80% 12.8/16	72% 11.5/16	67% 32.3/48
VAK	59% 9.4/16	80% 12.8/16	77% 12.4/16	72% 34.7/48

Table 3
Randomized Block Analysis of Variance:
Post Test of Recall

Mean = 8.06
S.D. = 3.15

Source	DF	Sum of Squares	F Value	PR>F
Model	28	1568.49	5.64	.00
Error	52	516.20		
Corrected Total	80	2084.69		
Person	26	1477.36	5.72	.00
Method	2	91.13	4.59	.01

Table 4
Randomized Block Analysis of Variance:
Post Test of Recognition

Mean = 12.30
S.D. = 2.17

Source	DF	Sum of Squares	F Value	PR>F
Model	28	668.44	5.08	.00
Error	52	244.44		
Corrected Total	80	912.89		
Person	26	624.89	5.11	.00
Method	2	43.56	4.63	.01

Table 5
Randomized Block Analysis of Variance:
Post Test of Context

Mean = 12.0
S.D. = 2.26

Source	DF	Sum of Squares	F Value	PR>F
Model	28	1401.09	9.75	.00
Error	52	266.86		
Corrected Total	80	1667.95		
Person	26	1387.95	10.40	.00
Method	2	13.13	1.28	.29

Table 6
Randomized Block Analysis of Variance:
Post Test Total Score

Mean = 32.38
S.D. = 5.26

Source	DF	Sum of Squares	F Value	PR>F
Model	28	9597.09	12.38	.00
Error	52	1440.05		
Corrected Total	80	11037.14		
Person	26	9329.80	12.96	.00
Method	2	267.28	4.83	.01

References

Bush, Wilma J. & Waugh, Kenneth W. Diagnosing Learning Problems. 3rd ed., Columbus, Ohio: Charles E. Merrill, 1982.

Duffelmeyer, Fred "The Influence of Experience-Based Instruction on Learning Word Meanings" Journal of Reading, 1980, 24, 1, 35-40.

Duffelmeyer, Fred & Duffelmeyer, Barbara B. "Developing Vocabulary Through Dramatization" Journal of Reading, 1979, 23, 141-143.

Fernald, Grace M. Remedial Techniques in Basic School Subjects. N.Y.: McGraw-Hill, 1943.

Fry, Edward "Fry's Readability Graph: Clarifications, Validity and Extension to level 17" Journal of Reading, 1977, 21, 242-252.

Haggard, Martha R. "Vocabulary Acquisition During Elementary and Post-Elementary Years: A Preliminary Report" Reading Horizons, 1980, 21, 1, 61-69.

Heckelman, Robert G. "A Neurological-Impress Method of Remedial-Reading Instruction" Academic Therapy, 1969, 4, 277-282.

Manzo, Anthony V. "'Subjective Approach to Vocabulary' Acquisition (or, . . .I think my brother is arboreal!)" Reading Psychology, Summer, 1982.

Manzo, Anthony V. & Sherk, J. K. "Some Generalizations and Strategies for Guiding Vocabulary Learning" Journal of Reading Behavior, 1971-72, 4, 1, 78-88.

Petty, Walter "A New Look at Vocabulary Research" in Clay Ketcham, ed. Proceedings of the College Reading Association, 1967, 8, 113-118.

Phillips, John L. Jr. The Origins of Intellect: Piaget's Theory. San Francisco: W. H. Freeman & Co., 1923.

Spache, George D. & Spache, Evelyn B. Reading in the Elementary School. 3rd ed., Boston: Allyn & Bacon, 1973.

Thorndike, Edward L. & Lorge, Irving. The Teacher's Word Book of 30,000 Words. N.Y.: Teachers College, Columbia University, 1944.

Wolpe, Joseph Psychotherapy by Reciprocal Inhibition. Palo Alto: Stanford University Press, 1958.